

Department of the Army
Headquarters, United States Army
Training and Doctrine Command
Fort Monroe, Virginia 23651-5000

*TRADOC Pam 600-4

1 September 2006

PERSONNEL—GENERAL
**INITIAL ENTRY TRAINING SOLDIER'S
HANDBOOK**

FOR THE COMMANDER:

Official:

THOMAS F. METZ
Lieutenant General, U.S. Army
Deputy Commanding General/
Chief of Staff



RANDALL L. MACKEY
Colonel, GS
Chief Information Officer

Summary. This pamphlet updates information that is intended for the professional development of all initial entry soldiers.

Applicability. This pamphlet is intended as a pocket reference for all initial entry soldiers and Reserve Officer Training Corps Cadets.

Suggested improvements. The lead responsibility for this pamphlet is the Deputy Chief of Staff for Operations and Training (DCSOPS&T). Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, TRADOC (ATTG-II), 5 Fenwick Road, Fort Monroe, VA 23651-1067.

Availability. This publication is available electronically via the TRADOC Homepage at www.tradoc.army.mil.

M16 rifles, M249 squad automatic weapon, M72A1 rocket launcher, and M203 grenade launcher. Table 6-1 shows which weapons systems upon which this night vision sight can be mounted.

INTEGRATION MATRIX - INDIVIDUAL WEAPONS						INTEGRATION MATRIX - CREW SERVED WEAPONS				
Accessory	M16A2	M161 M203	M4A1	M41 M203	M24	Accessory	M249	M240	M2	MK19
AN/PAC-4B/C	✓	✓	✓	✓		AN/PAC-4B/C	✓	✓		
AN/PAS-13, TWS	✓					AN/PAS-13, TWS	✓	✓	✓	✓
AN/PEG-2A	✓					AN/PEG-2A	✓	✓	✓	✓
AN/PVS-4(A)	✓	✓	✓	✓		AN/PVS-4(A)	✓	✓		
AN/PVS-10, SNS					✓	AN/PVS-10, SNS				
AN/PVS-14						AN/PVS-14				
AN/PVS-5	✓					AN/PVS-5			✓	✓
M8B, CCD	✓		✓			M8B, CCD				
M145, MGO						M145, MGO	✓	✓		
BIS			✓	✓		BIS				
MILES	✓	✓	✓	✓	✓	MILES	✓	✓	✓	
AN/PBX-1	✓	✓	✓	✓		AN/PBX-1	✓	✓	✓	✓
Notes: When mounting the AN/PAC-4B/C to the M203 the grenade launcher must first have the Quadrant Sight Removed.						1. Final configuration for the M249 will be with AN/PEG-2A. The AN/PAC-4B/C may be used if the AN/PEG-2A is unavailable. 2. The MGO will be used on the M249 only when it is employed in the light machine gun role. 3. The AN/PBX-1 will replace the AN/PAC-4B/C once fielded.				
CCO - Close Combat Optic MGO - Machine Gun Optic BIS - Back-up Iron Sight										

Table 6-1. Accessory weapon system matrix.

TECHNICAL DATA

Table 6-2 contains the general characteristics of each weapon system.

Table 6-3 shows the characteristics of the various optical accessories.

CHARACTERISTIC	M16A1	M16A2/A3	M16A4	M4
WEIGHT (pounds): Without magazine and sling With sling and loaded 20-round magazine 30-round magazine	6.35 8.75 7.00	7.75 8.45 8.79	9.05 9.75 10.09	6.49 7.19 7.50
Bayonet knife, M8 Scabbard Sling M1	1.50 0.30 0.40	1.50 0.30 0.40	1.50 0.30 0.40	1.50 0.30 0.40
LENGTH (inches): Rifle with bayonet knife Overall rifle length Buttstock closed Buttstock open	44.25 39.00 N/A N/A	44.88 39.53 N/A N/A	44.85 39.63 N/A N/A	N/A N/A 29.75 33.0
OPERATIONAL CHARACTERISTICS: Barrel rifling right hand 1 twist (inches) Muzzle velocity (feet per second) Cycle rate of fire (rounds per minute)	12 1,250 700-800	7 3,100 700-800	7 3,100 800	7 2,970 700-900
MAXIMUM EFFECTIVE RATE OF FIRE: Semiautomatic (rounds per minute) Burst (3-round burst) (rounds per minute) Automatic (rounds per minute) Sustained (rounds per minute)	45-65 N/A 150-200 12-15	45 90 150-200 A2 12-15	45 90 N/A 12-15	45 90 N/A 12-15
RANGE (meters): Maximum range Maximum effective range Point target Area target	2,653 900 N/A	3,690 550 800	3,600 550 600	3,600 500 600

Table 6-2. Characteristics of the M16-/M4-series weapons.

CHARACTERISTICS	ACCESSORY				
	CCO	PAQ-4C	PEQ-2A	MTWS	HTWS
WEIGHT	6.2 oz	5.75 oz	7.5 oz	4.1 lbs	4.5 lbs
LENGTH	4.9 in	5.8 in	6.4 in	15.5 in	18 in
HEIGHT	2.5 in	1.2 in	1.2 in	6.25 in	6.25 in
RANGE	300m	*500m	*600m	*1,600m	*2,200m
MOUNTING DEVICE: M16A1/A2/A3 M4 carbine M16A4 and M4 MWS	M16 mount **Upper receiver **Upper receiver	Bracket Assy Bracket Assy ***Rail bracket	Bracket Assy Bracket Assy ***Rail bracket	M16 mount Upper receiver Upper receiver	M16 mount Upper receiver Upper receiver
WINDAGE (1 increment clockwise) Top side mounted Left side mounted	Left 4 mm N/A	Left 1 cm Left 1 cm	Right 1 cm Left 1 cm	1 1/4 cm / 3/4 cm N/A	3/4 cm / 3/4 cm N/A
ELEVATION (1 increment clockwise) Top side mounted Left side mounted	Down 4 mm N/A	Up 1 cm Down 1 cm	Up 1 cm Up 1 cm	1 1/4 cm / 3/4 cm N/A	3/4 cm / 3/4 cm N/A

* Actual range is dependent upon ambient light, MWS, and background contrast.
 ** With half-moon spacer installed.
 *** Picatinny or weaver rail brackets may be used.

Table 6-3. Characteristics of various accessories for the M16-/M4-series weapons.

AMMUNITION

Use only approved ammunition (Figure 6-7). Do not fire seriously corroded ammunition, dented cartridges, cartridges with loose bullets, cartridges exposed to extreme heat (135°) until they have cooled, or cartridges with the bullet pushed in (short rounds). Turn all found ammunition to the Range NCO. Use only authorized ammunition. Keep ammunition dry and clean.

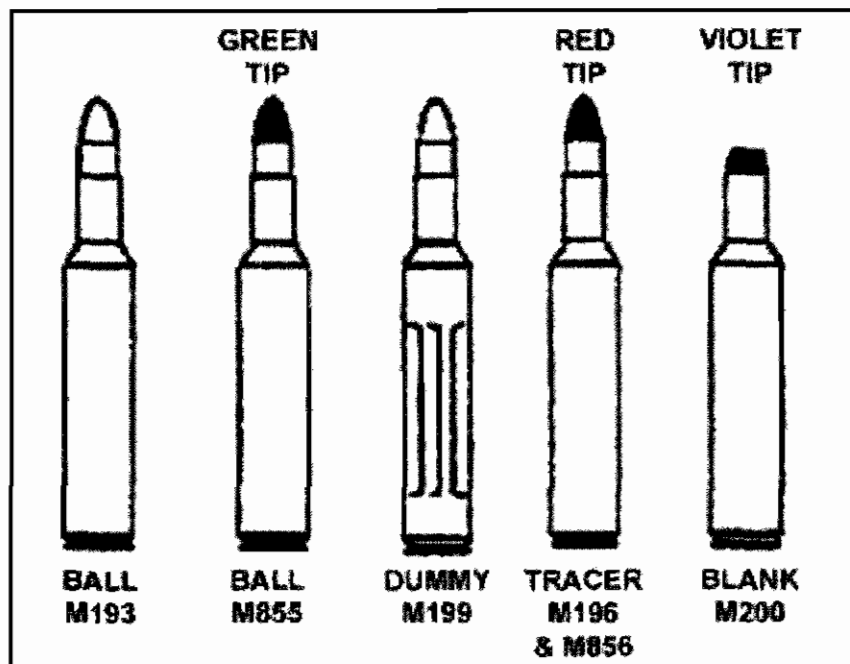


Figure 6-7. Approved ammunition.

TECHNICAL DATA

Table 6-7 contains M9 pistol technical data.

M9 Pistol Technical Data	
Caliber	9 x 19 mm (9 mm NATO)
System of Operation	Short recoil, semiautomatic
Locking System	Oscillating block
Length	217 mm (8.54 inches)
Width	38 mm (1.50 inches)
Height	140 mm (5.51 inches)
Weight (w/empty mag)	960 gr (33.86 ounces)
Weight (w/15 rd mag)	1145 gr (40.89 ozs)
Barrel Length	125 mm (4.92 inches)
Rifling	R.H., 6 groove (pitch 250 mm [about 10 in])
Muzzle Velocity	375 meters/sec (1230.3 ft/sec)
Muzzle Energy	569.5 newton m (420 ft.lbs)
Maximum Effective Range	50 meters (54.7 yards)
Maximum Range	1800 meters (1969.2 yards)
Front Sight	Blade integral with slide
Rear Sight	Notched bar Dovetailed to slide
Sighting line	158mm (6.22 inches)
Hammer (half cock)	Helps prevent accidental discharge
Magazine Staggered	15 round capacity Slide held open upon firing of last cartridge
Grips	Plastic, checkered

Table 6-7. M9 Pistol technical data.

SAFETY FEATURES

The M9 manual decocking/ safety lever located on the slide that separates the firing pin from the hammer ([1] Figure 6-17)) lowers the hammer when cocked. It also interrupts the connection between trigger and sear. The firing pin block ([2] Figure 6-17)) prevents any motion of the firing pin. It can be overcome only by pulling on the trigger.

AMMUNITION

NATO qualified 9-mm ammunition, any U.S. produced M882 ball or other service authorized ammunition can be used. Figure 6-18 shows some types that are acceptable.

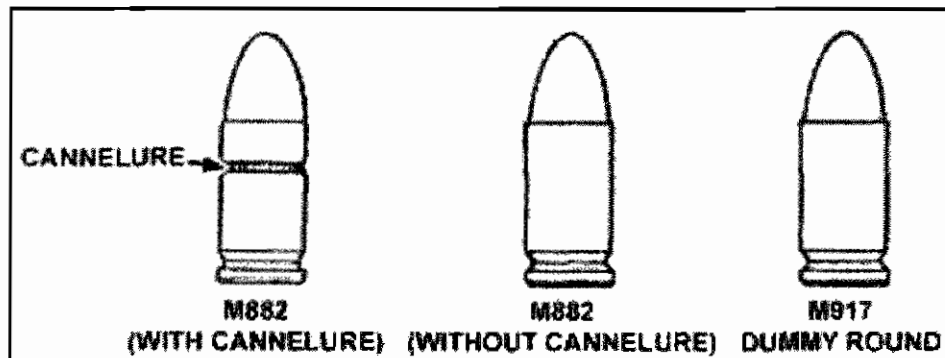


Figure 6-18. M9 Pistol authorized ammunition.

HAND GRENADES

DESCRIPTION

The hand grenade is a handheld, hand-armed, and hand-thrown weapon. U.S. forces use colored smoke, white smoke, riot-control, special purpose, offensive, and practice hand grenades. Each grenade has a different capability that provides the Soldier with a variety of options to successfully complete any given mission.

Hand grenades give the Soldier the ability to kill enemy Soldiers and destroy enemy equipment. Historically, the most important hand grenade has been the fragmentation grenade, which is the Soldier's personal indirect weapon system. Offensive grenades are much less lethal than fragmentation grenades on an enemy in the open, but they are very effective against an enemy within a confined space.

Smoke and special purpose grenades can be used to signal (ground-to-ground or ground-to-air signaling devices, or as landing zone marking devices), to screen (as screening devices for unit movements), to control crowds or riots, to start fires, or to destroy equipment. The hand grenade is thrown by hand. Therefore, the range is short and the casualty radius is small. The 4 to 5-second delay on the fuze allows the Soldier to safely employ the grenade.

MK 19 Technical Data	
Weight With Feed Throat	143.0 pounds
Mounts, M3 Tripod	
M4 Pedestal	
M66 Ring HMMWV Weapon Platform	
M113 APC Commander's Cupola	
Ammunition	
M430 (HEDP)	
M383 (HE)	
M918 (TP)	
M922 (dummy)	
Operational Characteristics	
Maximum Range	2,212 meters
Maximum Effective Range	1,500 m (point target)
Maximum Effective Range	2,212 meters (area target)
Rates of Fire	
Sustained	40 rpm
Rapid	60 rpm
Cyclic	325 to 375 rpm
Ammunition	M430 HEDP (2 inch armor, 15 meter casualty radius); M383 HE (15 meter casualty radius)
Service Frequency	50,000 rounds
Elevation	Tripod controlled: 100 mils
Depression	Tripod controlled: 258 mils
Traverse	Tripod controlled: 800 mils (400 left plus 400 right)
Muzzle Velocity (average)	798 feet per second
Recoil Forces (average)	500 pounds
Angle of Automatic Fire	0 to 70 degrees elevation (automatic fire), based on mounting arrangements
Weights	
Rounds	62 pounds (48 rounds in M548 metal container)
Planned Operating Load	400 pounds (32 rounds in PA120 metal container) - prescribed by local cdr

Table 6-19. MK 19 Technical data (continued).

AMMUNITION

The MK 19 uses 40-mm cartridges (Figure 6-42) as described below.

High-Explosive, Dual-Purpose M430 Cartridge: The high-explosive, dual-purpose (HEDP) M430 cartridge is the standard round for the MK 19 (Department of Defense Identification Code [DODIC] B542). They are linked with M16A2 links. The HEDP round, the top-curved portion of the projectile, is olive drab with a yellow ogive and yellow markings. It is packed in M548 (48 rounds) or PA120 (32 rounds) ammunition containers. The HEDP, an impact-type round, can penetrate 2 inches of steel armor at 0-degree obliquity and inflict personnel casualties out to 15 meters from impact. It arms within 18 to 30 meters of the gun muzzle and has a point-initiating, base-detonating (PIBD) fuze.

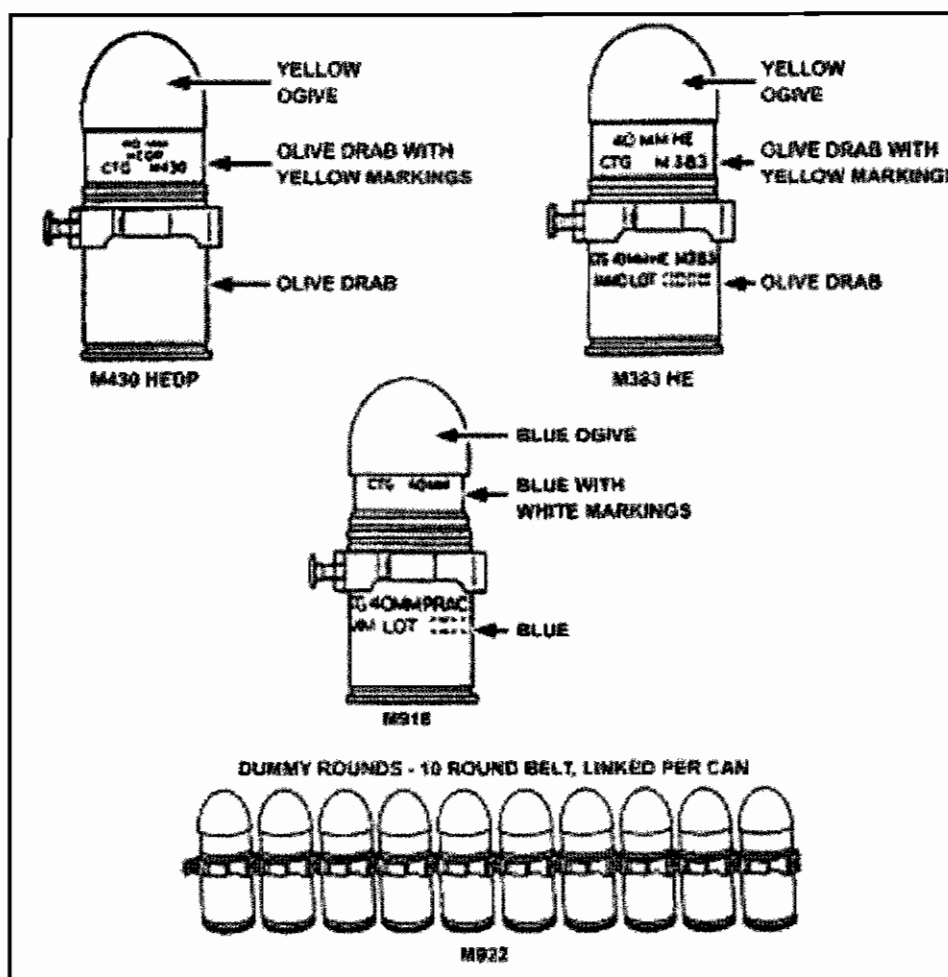


Figure 6-42. MK 19 Cartridges, 40 mm.

High-Explosive M383 Cartridge: The high-explosive (HE) M383 cartridge round is olive drab with a yellow ogive and yellow markings. It is packed in a metal ammunition container (48 rounds, linked, in each container). The HE round has a wound radius of 15 meters. It lacks the armor-penetrating ability of the HEDP

M430 round. The HE arms between 18 to 36 meters of the gun muzzle fuze.

M922 Dummy Cartridges: Each MK 19 is issued with one 10-round of inert dummy rounds belt (DODIC B472). M16A2 links join the dummy rounds into a 10-round belt packed in an M2A1 metal box. Trainers use dummy rounds to check weapon function and to train crews.

M918 Cartridge: The M918 is a training practice cartridge that has the same muzzle velocity of 790 feet per second (fps), signature, and sound as the HE round (DODIC B584).